

# Chronicles of Mt. John University Observatory

D.B. Mabin (suspected author)

c.1976

This is one of a number of documents concerning the Mount John University Observatory which are being uploaded to archive.org on the occasion of the Observatory's 50th anniversary in 2015.

No author is stated. The latest date given in the document is 1976, when the crated Brashear 45-cm refractor was moved, so this is presumably the approximate date of writing.

A history of the Observatory's first 50 years has just been published by J.B. Hearnshaw & A.C. Gilmore (*Mt John – The First 50 Years: A celebration of half a century of optical astronomy at the University of Canterbury*, Canterbury University Press 2015, pp 216, ISBN 978-1-927145-62-3). Chapter 4, footnote 40 mentions the *Chronicles* and adds "The description of the 1967 snowfall is probably written by D.B. Mabin." The brief description of the 1972 demonstration against the Mt John Satellite Tracking Station also seems personal. Mabin was employed at Mt John from 1966 to 1980, becoming Observatory Superintendent in 1970. One must suspect he was the author of the whole document.

William Tobin  
May 2015

## CHRONICLES OF MT. JOHN UNIVERSITY OBSERVATORY.

For initial site testing a corrugated iron building was erected at the summit this had a sliding roof. For a more intensive test a larger c.i. building with sliding roof was erected to house Mr. Bateson's 8" Grubb refractor.

*was made*

When the decision <sup>was made</sup> to use Mt. John for the Observatory site, further buildings and instruments were installed, and by January 1965 the following buildings were existing.

On the summit: C.I. Shed..... empty.  
To west " : 25 cm Astrograph in concrete block building with sliding roof.  
To NW " : C.I. Building with sliding roof containing Mr. Bateson's 8" Grubb refractor.  
To North " : Circular concrete block domed building containing Mr. Bateson's 16" reflector.  
To N.W. " : Quarters Borealis.  
To N.E. " : Residence.

Staff: Tekapo, Mr. Bateson. Astronomer in charge.  
Murray Rogers, Assistant.  
Christchurch, Professor F.B. Wood (Univ. Penn)  
From March. D.B. Mabin, Technician.

Murray Rogers resigned in May to Christchurch to continue university studies.

July 10: Official opening.

During 1965, the 16" reflector was fitted out with a photo-electric photometer, Dymec electronic readout and IBM card punch. (1P21 photomultiplier)

The four Bamberg cameras arrived about April, and it had been intended to install them in the testing shed after some modifications to the building. However on October 3 a wind which reached a speed probably in excess of 120 knots (there was no recorder then) removed the roof and dumped it several hundred meters to the S.E. so eventually the present concrete block building was erected.

October 1965, Carlson Chambliss, the first student from Penn. arrived and commenced photoelectric observations of B.V. stars.

Meanwhile, and until he retired, Mr. Bateson carried out a visual mapping of variable stars with the 8" refractor. Also, when the occasion occurred, a study of flare stars.

See info on page 12

From February to May 1965, a party of technicians from the N.Z. Navy and Army furnished information for measuring the distance between N.Z. and Australia. A concrete block just to the south of the Bamberg and Astrograph contains the datum point. Using a 5" refractor, they made simultaneous observations of lunar occultations with a similar set-up in Australia. Timing was through a continuous chart readout from a photo tube.

January 1966, Carlson Chambliss was joined by Kam Ching Leung from Penn. These two shared time on the 16" throughout the year. Carlson until October, Kam until December.

Early 1966 the Sky atlas programme commenced under the direction of Dr. Shane from Lick. Alan Thomas carried out the photography on the 125 mm camera, the 250 mm was set up with an eye piece for guiding. This programme carried on for two years. Some of the plates were taken again by Mike Clark 71, 72.

1966 -67 Professor Bill Protheroe., on a Guggenheim Fellowship, carried out photoelectric observations of variables etc. on the 16".

1966-67, for about 16 months, Stephan Price of the I.T.T. did a survey of infra red sources. A prefab dome building on the site now occupied by the Optical Craftsman reflector housed a 60 cm aluminium reflector of focal length about 1.5 meters(?)

Meanwhile a mounting for the Bamberg cameras had been made in Wellington and installed in the new building. Ulrich Kohler from Remels Observatory early 1967 and trained Ian Paterson to carry out the Bamberg patrol. Ulrich left at the end of the year. Ian remained until March 1971 when Mike Clark took over the patrol. During the course of his work he discovered Comet Clark/

1967 -68 Scott Shaw and Ed Guinan, students from Penn shared time on the 16" studying mainly B.V. stars. During 1968, when the Sky Atlas programme finished, a duplicate photometer to that on the 16" was set up on the 250 mm astrograph. The Dymec gear had been circuitised to take readings from two photometers, but as the card punch could not be programmed to take two simultaneously, readout was by Brown recorder only. However, the astrograph proved too cumbersome for variable star work, and the only really useful photoelectric observation was on the occultation of ? by Neptune.

May 1965, the seismograph was first operating. The seismometer pit is 150 meters to the east, away from human disturbances. The signals from the seismometers are fed to reflecting galvanometers and on photographic paper rotating on a drum. Some months of recording on a single drum, proved that Mt. John was an excellent site for this work, being a very "quiet" area and allowing an amplification of about 43 000. During 1966 a triple drum was substituted, since when we have been recording the Vertical, N.S. and E.W. components. These records are changed daily, developed, and once a week sent to the Seismological Observatory in Wellington for analysis. The seismograph is run on their behalf.

During and since site testing days we have been undertaking synoptic observations for the N.Z. Meteorological service. These take place every three hours from 0900 to 2100 and the coded messages telegraphed or phoned to the Christchurch Weather Office.

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1967 November, about midday, snow started falling quite heavily. By 1500 the snow was lying 15 cm deep. All staff except D.B. Mabin and Michael Scott, the summer assistant, were at Whakatane at the annual conference. About 1515 Michael was taken to Tekapo in the Landrover, however visibility was so poor that it was impossible to return. Snow kept falling at that pace throughout the night, and by 0900 on the 17th it was 1.5 meters deep in Tekapo and 2 meters on Mt. John. (Signs of this were visible when the observatory was again accessible). On the 18th the Godley peaks Road was cleared and was shoulder high when sitting in the landrover. Attempts to clear the Mt John road were futile, and the summit was not accessible until the 22nd. The snow remained with little thaw until pm 26th when 50mm of warm rain fell in two hours. This thawed the snow completely releasing the equivalent of almost 200mm of rain in two hours. Great flooding occurred, completely overloading the ditches; all the culverts were completely jammed with gravel and boulders; the road was severely scoured in many places, some channels being gouged out over a meter deep. Debris was spread out over about two hectares of the land below the lower zig-zag.

March 12 1972: A party of demonstrators organised by Owen Wilkes, caused hundreds of dollars worth of damage. This despite a written undertaking by Owen Wilkes that no damage would be done and any litter would be cleaned up. This undertaking was not upheld. Damage included: removing tar seal from the road, dismantling safety fences, smashing road signs, cattlestops, fences and gates. Rocks, some weighing about 2 000kg were spread over 3km of the road. Damage was also done to farmers' property and that of others around Tekapo. Many of the rocks dumped on the road have since been built into rock walls and gardens.

1968 - 69, George Wolf and Gordon Spear were the two students from Penn. Gordon made photoelectric observations of B.V. stars on the 16". George and the new dome building awaited in vain for the arrival of the reluctant 60cm Optical Craftsman reflector. George carried out work on behalf of others, but could not pursue his own programme, as his equipment had been built to fit the new telescope.

By February 1969, the Quarters Australis was ready for occupation. October 31 Mr. Pateson retired and Ivan Thomsen from Carter was Astronomer in Charge. Unfortunately, he had a relapse of a recent illness and died at the end of the year.

By October 1969, The 8" and 16" telescopes had been dismantled and left Mt. John. The dome building has since been used for storage purposes. The 8" building was converted for use as a workshop. This has meant a much better servicing and greatly reduced tripping to Christchurch, the Powerhouse and other places for workshop facilities.

October 1969 also saw the commissioning of the Baker-Nunn Tracking Station. Apart from the company and use of facilities, this has brought two great benefits; a sealed road, and a continuous water supply. The rainfall had been insufficient to supply needs of the observatory, and much water had been carted up in tankers and cans-ful in the landrover.

BENDIX TOOK OVER OCT 1975. CLOSED OCT 1983

The C.C. 60 cm was installed on Feb 18 1970. The photometer had been adapted for fixing to this instrument and all the readout had been transferred from the 16". Frank and Elizabeth Giovane arrived from Penn in June. Frank brought his own designed infrared photometer. Elizabeth carried out variable star observations with the other photometer. These two people had to struggle with all the initial problems of the telescope, which were many. These two returned to Penn in December.

D.B. Mabin had been appointed superintendent from February.

1974

June - September, Larry Twigg from Florida again photoelectric observations of B.V. stars.

1972 Gopal Kilambi from Penn for about 3 months; photoelectric on Optical Craftsman reflector.

1970 June 2 About 0600 received a call that Quarters Australis was on fire. Ian Peterson and Frank Andrews were battling with a blaze in the kitchen and lounge. Tracking Station staff rendered aid; mainly by bucket brigade. Ironically, the new water supply had been installed but was not at that time operational because of the need to replace the motor of the pump.

Fire tenders from the Army camp and Fairlie Brigade (none in Tekapo then) joined the battle, but being winter, their tanks were empty and needed to be filled first. Aid was also given by the Powerhouse staff. The fire was largely out when the tankers arrived, but they were useful in dousing the smouldering remains.

The fire had been caused by fat left unattended on the electric range.

The quarters had been gutted, and it was October before they were again ready for occupation.

1970 September 10 1800 wind averaging 116 knots, gusting 135Kn. Damage was minor considering the wind, but buildings etc. were shaking and rattling in a frightening manner. There were then ranchslider doors in the residence.

1970 Sept 16, 6 cm of rain in a short time scoured out ditches and spread gravel over the road. This time, however, there was little scouring to the road.

The last quarter of 1974 saw the erection of the building to house the Boller and Chivens 60 cm reflector. April 28 to May 2 Mr. Ron Plate was present installing the instrument. A 20 cm refractor made by Garry Nankavill and Grahaeme Kershaw was fitted for guiding. Image tube photography and spectrometry are the two main programmes on this instrument.

Mike Snowden has been a periodic visitor to Mt. John for photoelectric photometer observations. The last visit, July 1975 in connection with the Apollo-Soyuz project.

(See Rod Austin for further details)

1971. January Rod Austin, March Mike Clark joined on year to year grants from N.S.F. funds. When this source ceased, they were taken on permanent staff of the University (Aug 1975)

( See these two for further details of programmes.)

1971 July - 1972 February. Vic Church was technician  
Since May 1972 John Baker has been Chief technician.

See Dr. Noel Doughty about his programme on Asteroid Geographies and his other programmes.

See Mr. Ken Fea about his programmes and these two will be able to furnish information (if you do not already have it) about the students from Canterbury. Many have been to Mt. John for very brief visits, but those who have spent considerable periods are:

Stephan Moneaki, <sup>Ken Marsh</sup> Bruce Mackay, Graham Chapman, Raen Warren, Sue Williams, Ruth Habgood, Jim Scott, Cameron McNally.

Since 1971 a programme initiated by Dr. Beaglehole of Victoria with their monochromator has been undertaken on the O.C. reflector. The main two concerned with this pursuit are Drs. Denis Sullivan and Joe Trodahl. This has usually been a two week period in August and/or October.

Consult Dr. John Hearnshaw about his programmes.

Note: When the occasion has arisen, the photometer and photography programmes have also included study on such things as flare stars, supernovae, comets etc.

The 45 cm refractor was stored in the Tekapo Powerhouse from 1964 to early 1968 when it was brought up the mountain. Most was housed in an extension to the 8" building. The large case was weatherproofed and left outside the building. During 1976, it was transferred to its own shed SW of the astrograph.